

1. A surgical training system, comprising:
 - a base;
 - a frame extending from the base;
 - a first instrument tracking module coupled to the base for tracking a position of a
 - 5 first instrument during a training procedure performed by a user; and
 - a workstation coupled to the first instrument tracking module for processing position information of the first instrument to objectively analyze performance of the user as compared to one or more experts.
- 10 2. The system according to claim 1, wherein the first instrument includes a laparoscopic instrument and a position tracking device.
3. The system according to claim 2, wherein the first instrument tracking module includes a Hall-effect sensor.
- 15 4. The system according to claim 1, further including a second instrument tracking module coupled to the workstation to track a position of a second instrument.
5. The system according to claim 1, further including a data processing module to
- 20 compute a score for one or more parameters based upon the position information of the first instrument over the course of the one or more training procedures.
6. The system according to claim 5, further including at least one parameter processing module selected from an elapsed time module, a path length module, a motion
- 25 smoothness module, a depth perception module, and a response orientation module.
7. The system according to claim 1, wherein the first instrument tracking system includes sensors to track an instrument in first, second, and third axes and rotation about an axis of the first instrument.

8. The system according to claim 1, further including a training object to provide realistic haptic feedback to the user during the training procedure.
9. The system according to claim 8, further including a platform to support the training
5 object.
10. The system according to claim 8, wherein the training object includes simulated skin.
- 10 11. The system according to claim 1, further including a visual feedback system coupled to the frame.
12. A surgical training system, comprising:
a workstation;
15 an instrument tracking means coupled to the workstation for tracking a position of first and second instruments during a training task;
a display means for generating visual feedback information for the training task to a user; and
a parameter processing means to compute an objective performance assessment of
20 the training task based upon at least one parameter derived from the instrument position information.
13. The system according to claim 12, further including a database to store instrument position information for the training task.
- 25 14. The system according to claim 12, wherein the parameters include one or more of elapsed time, motion smoothness, total path length, response orientation, and depth perception.

15. The system according to claim 12, wherein the instrument tracking means includes at least one Hall sensor.

16. The system according to claim 12, wherein the parameter processing module includes a means to compare the instrument position information of the user to expert information.

17. A method of surgical training, comprising:

tracking a position of a surgical instrument during a training procedure in which a user manipulates a simulated anatomical workpiece providing substantially realistic haptic feedback; and

objectively assessing performance of the user by analyzing position of the surgical instrument during the training procedure by comparison to a position of the surgical instrument during the training procedure derived from experts in the training procedure.

18. The method according to claim 17, further including objectively assessing performance of the user with a series of parameters.

19. The method according to claim 18, wherein the parameters include one or more of depth perception, smoothness, response orientation, path length, and elapsed time.

20. The method according to claim 19, further including assigning weights to the parameters.

21. The method according to claim 19, further including computing a z-score for the parameters.

22. The method according to claim 17, further including providing visual feedback to the user.

23. The method according to claim 17, further including providing the surgical instrument as a full-length laparoscopic instrument.